

Notice of Allowability

Application No.

10/046,768

Examiner

Paul A Baker

Applicant(s)

RANKIN ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 17 January 2002.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☒ The drawings filed on 17 January 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

Examiner has included the entire body of patents pertaining to snoop filters (also known in the art as a coherency filter) that are not commonly assigned.

Of all the references cited, only two make a specific mention of a snoop (coherency) filter that is comprised of a cache.

The first; Gaither, US PG PUB 2002/0073281, states in paragraph 41 that a coherency filter is a data-less cache. Gaither further states that when a processor makes a memory request, the coherency filter stores all the information about the cache line except the data itself (coherency information, tag, processors which have a copy etc). Gaither makes no mention of what is done when lines are replaced in one or more processor caches, nor does Gaither distinguish between processor action types. Since at least one of these limitations is present in independent claims 1, 10 and 14. The present application is found allowable over Gaither in view of these limitations when combined with the other specified limitations.

The second; Phelps, US Patent 5,966,729, discloses an interest cache located within the snoop filter (figure 4 element 324). Phelps discloses the means of updating the interest cache is performed via a page scrubber as detailed in column 7 line 49 through column 8 line 29. This teaches away from applicants disclosed invention, since updates are generated via an internal mechanism, and not in response to transaction

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performed by a processor. Therefore applicant's invention is found allowable over Phelps.

Since these two references are the only prior art of record that disclose a snoop filter comprised of a cache, applicant's claimed invention is found allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A Baker whose telephone number is (703)305-3304. The examiner can normally be reached on M-F 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703)306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Mano Padmanabhan
9/30/04

**MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER**

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PB



9/30/04

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER